(b) REMARKS:

The claims are 1-7 with claim 1 the sole independent claim. Reconsideration of the claims is requested in view of the remarks which follow.

Claims 1-7 were rejected under Rule 112, second paragraph on the ground that Applicants had stated that amount and dispersion state of magnetic material are critical elements to the claimed toner, but such elements are not recited in the claims.

Claims 1-7 were also rejected as obvious over USPGP2003/044708 (Matsunaga) in view of (Sawada) USPGP2003/0039909 considered with JP 06-118700 (JP '700). Claim 4 was rejected as obvious over the same references further in view of Ohtani, USP 4,789,613.

The Examiner argued that Matsunaga '708 discloses each of the recitations in Claim 1 except the specific gravity of 1.3 to 1.7 g/cm^3. The dielectric loss tangent of Formula 1 is argued to be inherently present in Matsunaga. The Examiner argues that Sawada discloses the specific gravity range and that JP '700 discloses the Formula 1 dielectric loss tangent. All the grounds of rejection are respectfully traversed.

With regard to the rejection under 35 U.S.C. 112, second paragraph, it should be noted that true specific gravity of the magnetic toner of the present invention is defined as "1.3 to 1.7 g/cm^3" in claim 1 (see (iii) of claim 1). This means that the amount of magnetic body present in the magnetic toner is substantially defined in claim 1.

Furthermore, the dispersed state of magnetic body present in the magnetic toner is defined in claim 1 by the definition of dielectric loss tangent (tanσ) of the magnetic toner at a frequency of 100kHz which satisfies formula (1) (see (vi) of claim 1).

[Formula]

$(\tan\sigma_H - \tan\sigma_L) / \tan\sigma_L \leq 0.20$ (1).

The correlation between the dispersed state of a magnetic body in a toner and the dielectric loss tangent of the magnetic toner is disclosed in specification paragraphs [0019] to [0024]. The dispersed state of the magnetic body in the toner is indicated by the rate of change of dielectric loss tangent [0024].

Therefore, the claims correspond in scope to the claimed invention.

With regard to the art rejection JP'700 discloses a measurement of the dielectric loss tangent (tanσ) of the magnetic toner at a frequency of 10kHz (see Examples 1 and 2). Specifically, JP '700 discloses a peak value of tanσ which is mainly based on glass-transition temperature of a binder resin. Further, with regard to the peak value of tanσ of the toner, JP'700 also shows a symmetrical graph with respect to the peak value showing the relationship between temperature and tanσ value (Fig. 1).

However, JP'700 neither discloses nor suggests a measurement of a peak value of tanσ of the magnetic toner at a frequency of 100kHz. As described in the present specification (see paragraph [0022]), when the frequency is lower than 100 kHz, the influence of the glass transition temperature of a binder resin is increased. As a result, a rate of change in dielectric loss tangent around the glass transition temperature is so large that it becomes difficult to determine the dispersed state of the magnetic body. Furthermore, JP'700 does not disclose the dispersed state of a <u>magnetic</u> body present in the magnetic toner. It discloses only a nonmagnetic toner in the Examples.

From the above, it is clear that JP'700 neither discloses nor suggests the tanσ value of the magnetic toner which is measured at the frequency of 100kHz, nor the nature of the dispersed state of magnetic body present in the magnetic toner.

One of ordinary skill in the art cannot understand the tanσ value of a magnetic toner measured at a frequency of 100kHz based on the disclosure of JP'700 of results at 10kHz. Therefore, there is no motivation for one of ordinary skill in the art to combine JP'700 and Matsunaga et al., and to determine the tanσ value of the magnetic toner disclosed in Matsunaga et al.

Furthermore, Matsunaga et al. disclose the amount of magnetic body present in the magnetic toner in a very broad range (20 to 200 parts to 100 parts binding resin), see paragraph [0082] of Matsunaga et al. Matsunaga et al. also disclose that when the magnetic toner contains a magnetic body containing a non-ferrous element(s), the magnetic body can be well dispersed in the binding resin, and, thereby, the electrification uniformity and stability of the magnetic toner can be improved.

However, as described in Examples of the present specification (especially "Comparative Toner"), a magnetic toner containing a small amount of magnetic body having a low true specific gravity does not inherently provide a desired dispersed state, even if the magnetic toner contains a magnetic body containing the non-ferrous element, such as Zn and Ti. This means that in a magnetic toner containing a small quantity of magnetic body having a low true specific gravity, it is also necessary to carefully control the dispersed state of the magnetic body in the magnetic toner in order to control the value of tanσ to satisfy the formula (1) of claim 1 by a method described, for example, in instant paragraph [0024]. Therefore, one of ordinary skill in the art cannot obtain a magnetic toner which satisfies the formula (1) of claim 1, where the magnetic toner merely contains a small quantity of magnetic body as disclosed in Matsunaga et al., but without controlling the dispersed state of the magnetic body.

In summary, Matsunaga fails to teach the benefits a magnetic body having smaller amounts of magnetic body in a controlled dispersed state. Further, Matsunaga fails to disclose the benefits obtained by using the toner satisfying the requirements of the present invention.

Sawada teaches nothing about improving the dispersed state of metal materials in a toner. The toner produced by Sawada is not indicated to have the dispersed state of the present invention. Sawada does not even use metal materials to satisfy specific magnetic properties, but uses metal materials merely as a filler. In the Examples of Sawada, hematite, a nonmagnetic material, was used.

As previously argued in the last response on the merits, the Examiner stated that as a toner is heated to and beyond its glass transition temperature, the peak dielectric loss tangent (tan ∂) will coincide with the glass transition temperature of the toner, and the shape of the peak is symmetrical. However, in the case of a <u>magnetic</u> toner, the dielectric loss tangent is greatly affected by polarization of a magnetic material in the toner. Accordingly, the shape of the dielectric loss tangent does not typically show the bilateral symmetry at the nexus of the glass transition temperature (Tg) of a resin as disclosed in Drawing 1 of JP '700. Where a toner contains magnetic material, the peak of the dielectric loss tangent is significantly affected by the way in which the magnetic material is dispersed in the toner (see instant specification, paragraph [0019]). Especially in the case of a toner which has a lower true specific gravity (1.3-1.7g/cm^3) and a reduced magnetic material content (25-70 parts magnetic material per 100 parts resin; - see [0029]), as in the toner of the present invention, the peak of the dielectric loss tangent is significantly affected by the

dispersed state of the magnetic material in the toner. The instant claimed saturation magnetism reflects the presence of such reduced amounts of magnetic material.

The toners of the Examples in the instant specification are obtained by methods designed to enhance the dispersability of the magnetic material in the toner. For Example, the toner can be obtained by controlling the viscosity of a molten product through the adjustment of a kneading temperature to be equal to or higher than the softening point of the binder resin at the time of hot-melt kneading (see, page 12, paragraph [0019], of the specification). The toner can also be produced, for example, by incorporating a larger amount low-molecular-weight component having a molecular weight of 10,000 or less into the binder resin (see, page 26, paragraph [0052]. Alternatively, for example, the toner can be obtained by employing a binder resin having a small particle size in the step of mixing raw materials (see, page 26, paragraph [0053]). The toners obtained by using the above exemplary methods have improved dispersability of the magnetic material in the toner. As a result, the dielectric loss tangent (tan ∂) of the toners are satisfied by formula (1) in claim 1.

As stated above, the theory disclosed in JP '700 cannot be simply applied to Matsunaga since the theory does not take into account the effect of dispersibility of the magnetic material in the toner. Furthermore, the content of the magnetic material in Matsunaga is more than that in the present invention. Therefore, the true specific gravity of the toner is beyond that claimed in the present invention. In Matsunaga the magnetic material is generally present in amounts up to 200 parts per 100 parts binder and, in the Examples, typically 100 parts resin to 90 parts magnetic material, as contrasted to the 25-70 parts magnetic material per 100 parts binder typically present in applicants' toner. In

Matsunaga the saturation magnetism is typically up to 200 Am^2/ka, preferably 70-100 Am^2/kg, as contrasted with 20-35 Am^2/kg of the present invention.

Therefore, Matsunaga does not teach improving the dispersed state of the magnetic material in a toner having a relatively low content of magnetic material. In Matsunaga, merely reducing the content of the magnetic material in the toner can not lead to a toner satisfying formula (1) of the present invention. The magnetic material must also be well dispersed. Additionally, Sawada, et al. does not disclose improving the dispersed state of a metallic material.

The claims should be allowed and the case passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

/Peter Saxon/
Peter Saxon
Attorney for Applicants
Registration No. 24,947

FITZPATRICK, CELLA, HARPER & SCINTO
1290 Avenue of the Americas
New York, New York 10104-3801
Facsimile: (212) 218-2200

FCHS_WS 4931543v1